

FIG.1

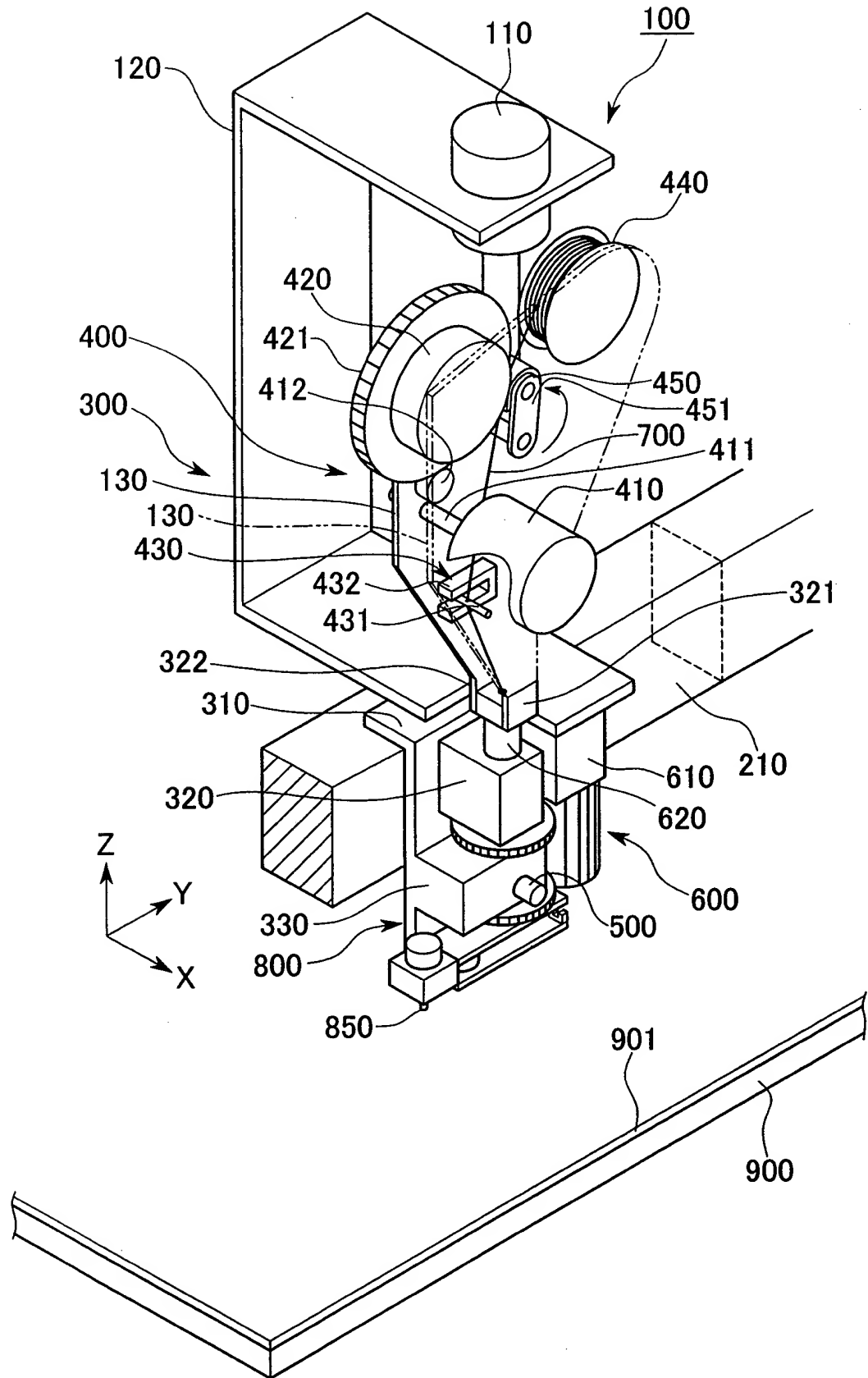
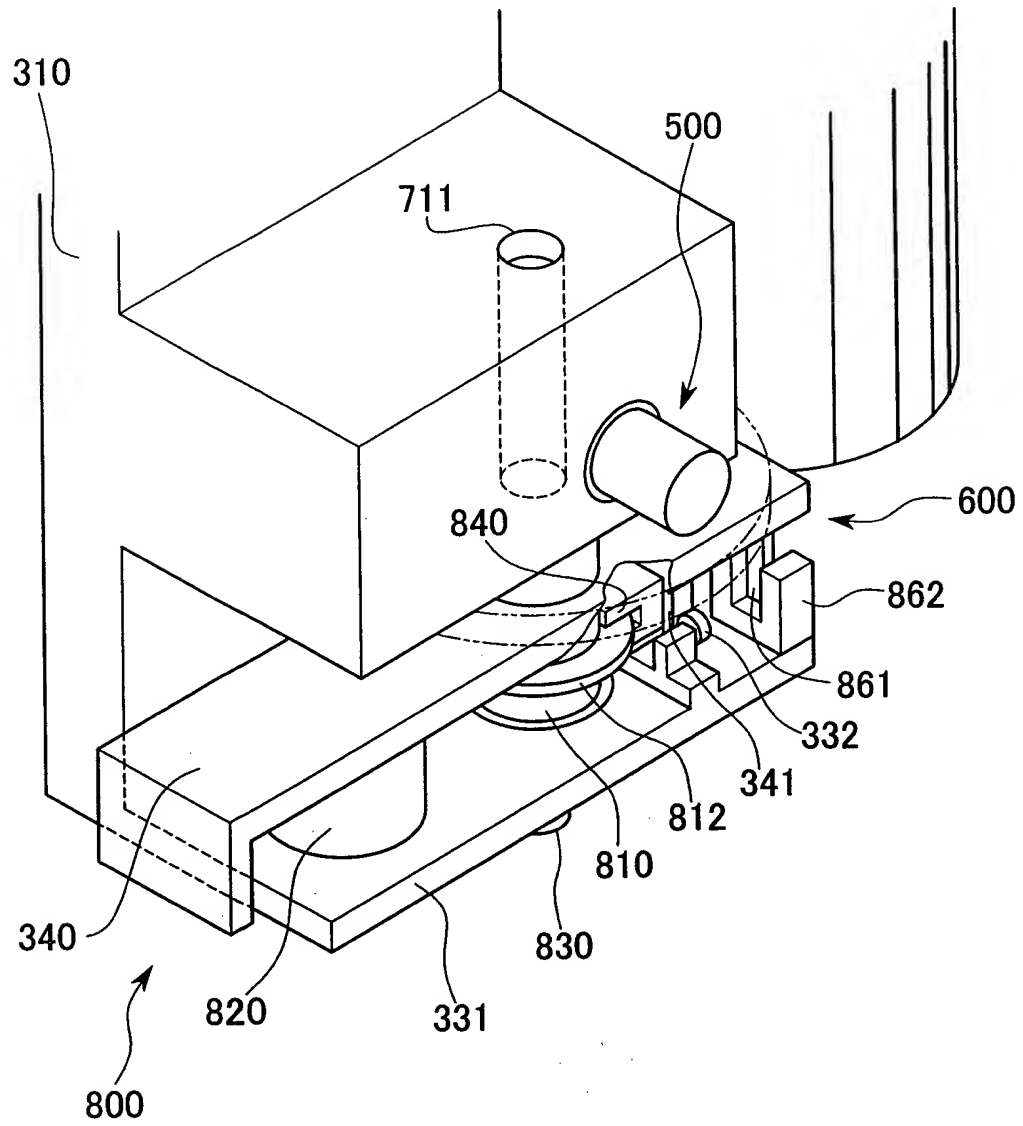


FIG.2



$\frac{d}{dt} \left(\frac{\partial L}{\partial v^j} \right) = \frac{\partial L}{\partial x^j}$

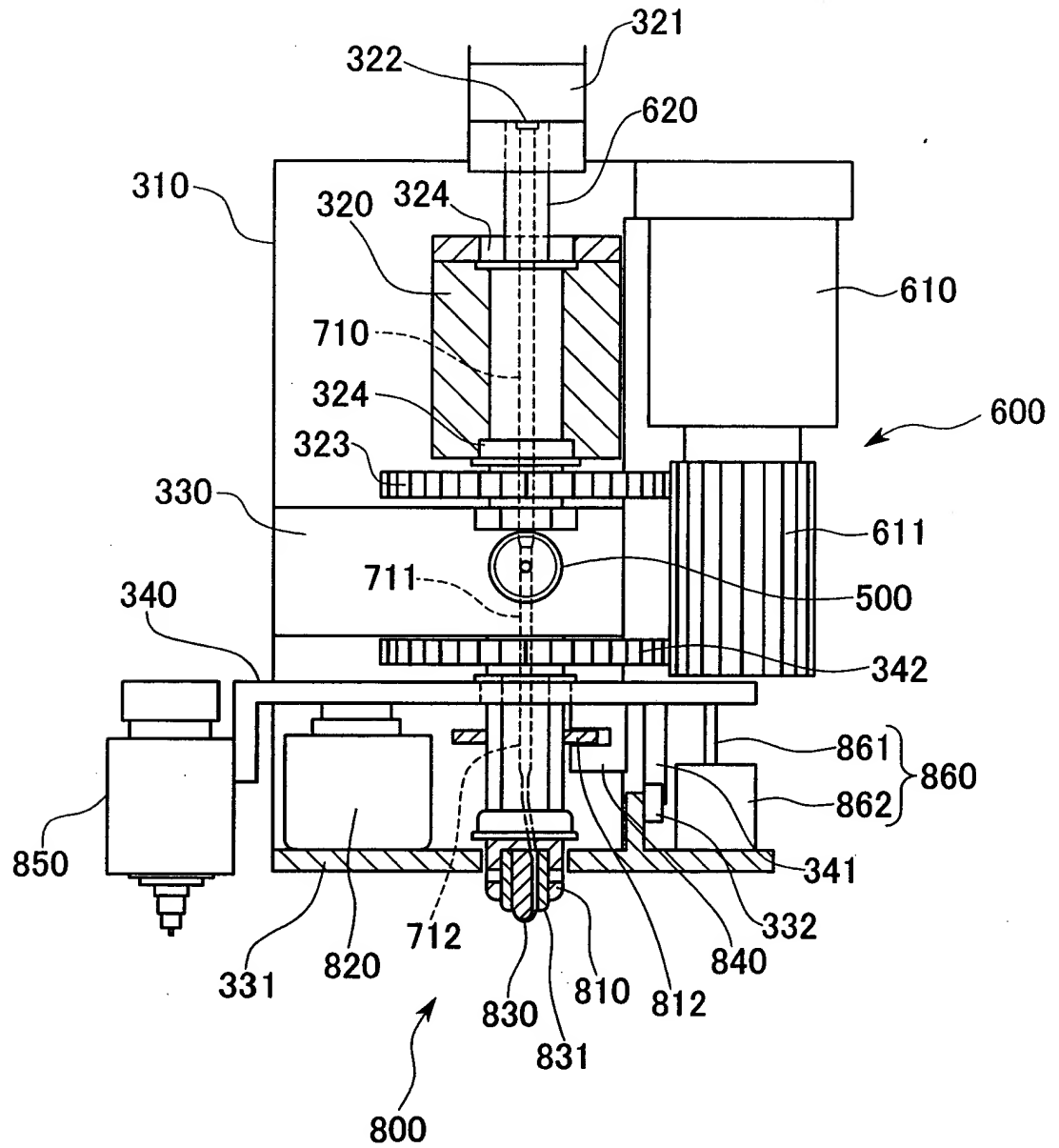
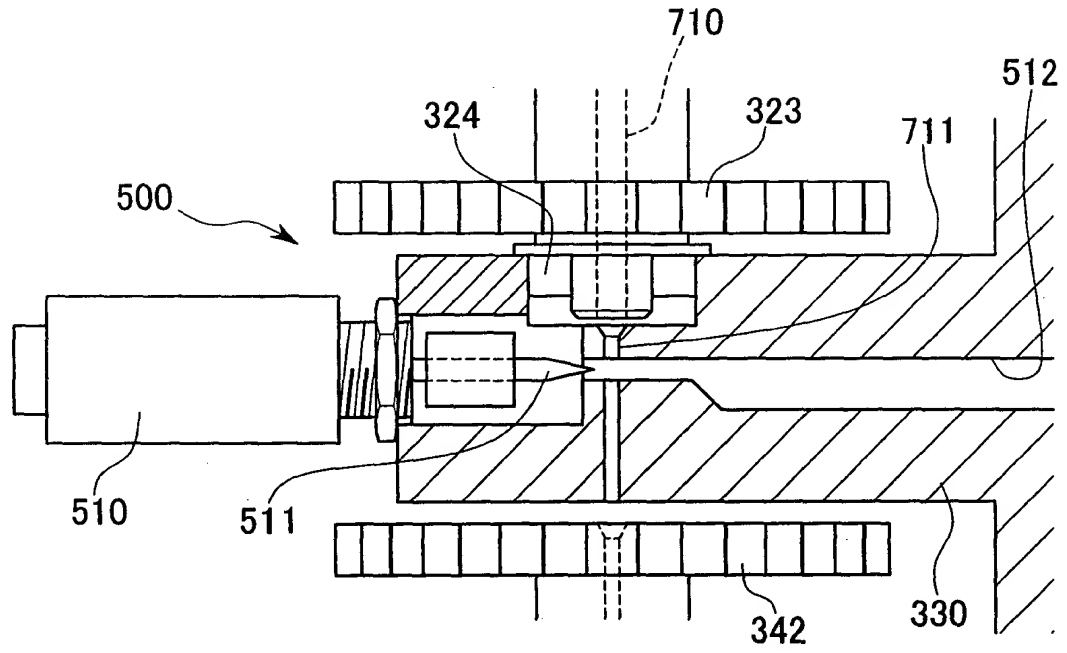


FIG.4



003730" 0036560

FIG.5a

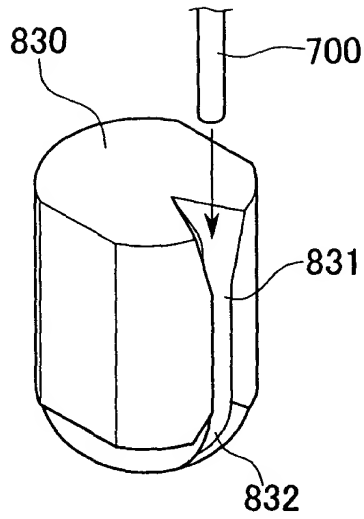


FIG.5b

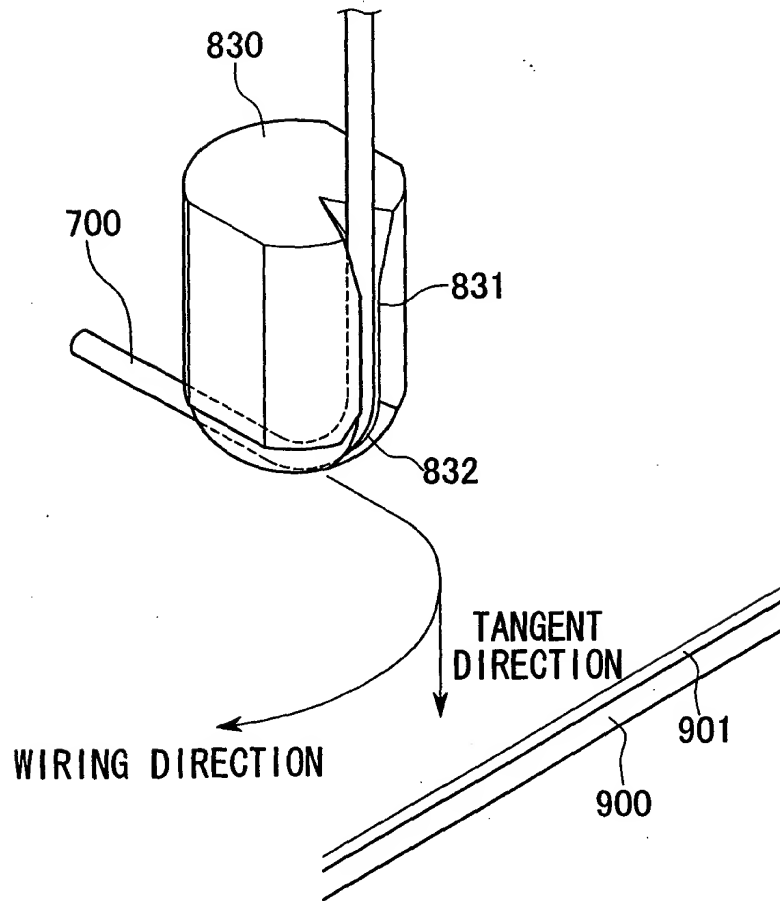


FIG.6a

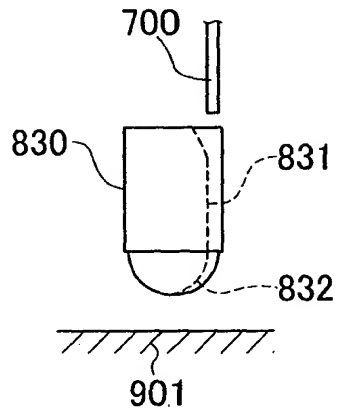


FIG.6d

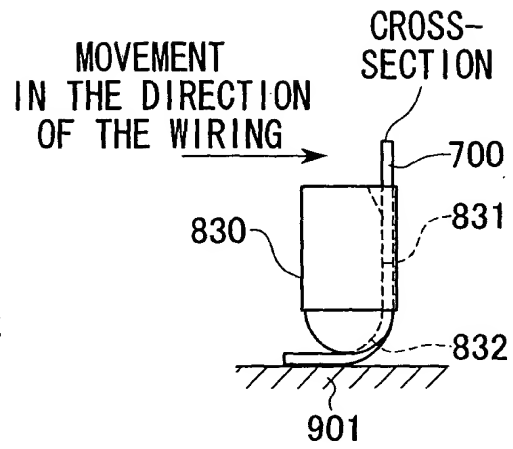


FIG.6b

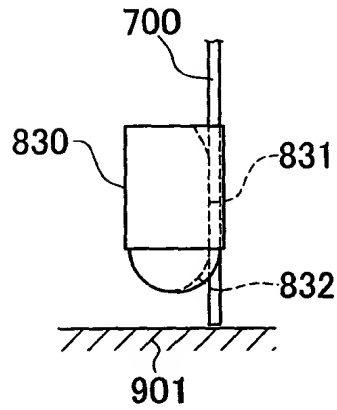


FIG.6e

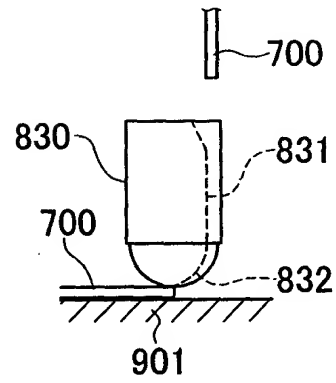


FIG.6c

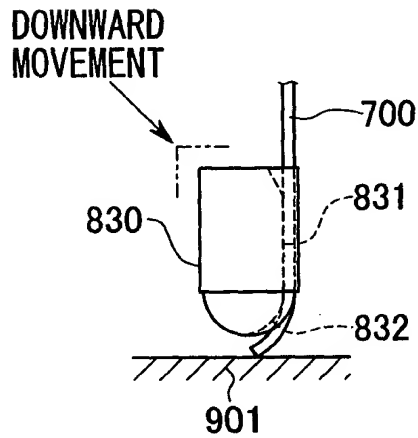
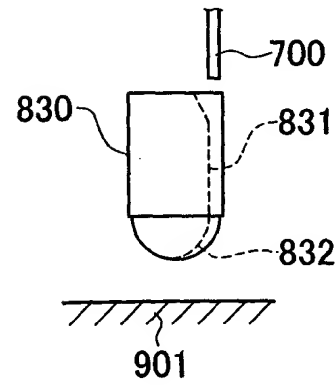


FIG.6f



005130" 0036560

FIG.8

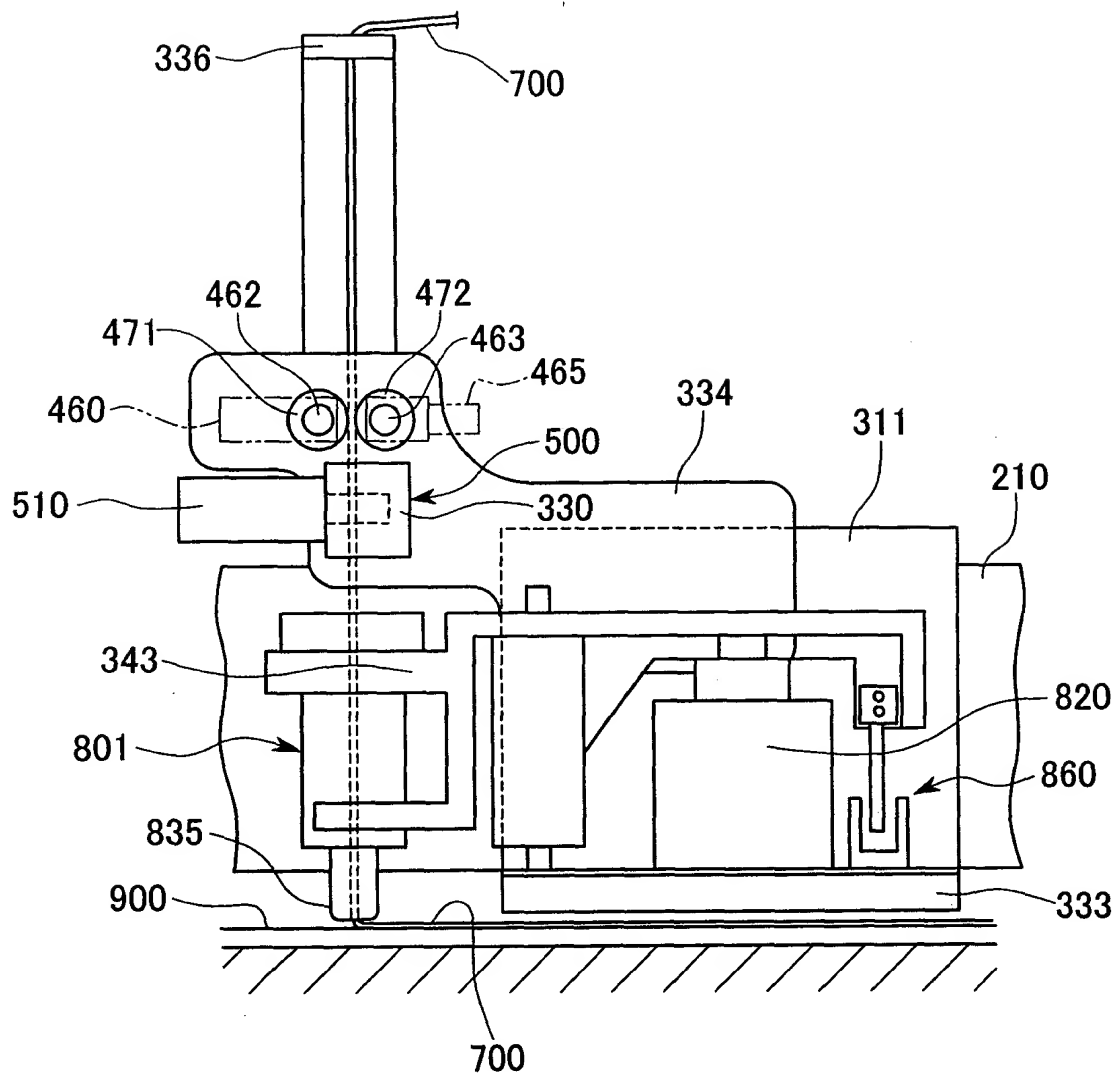


FIG.9

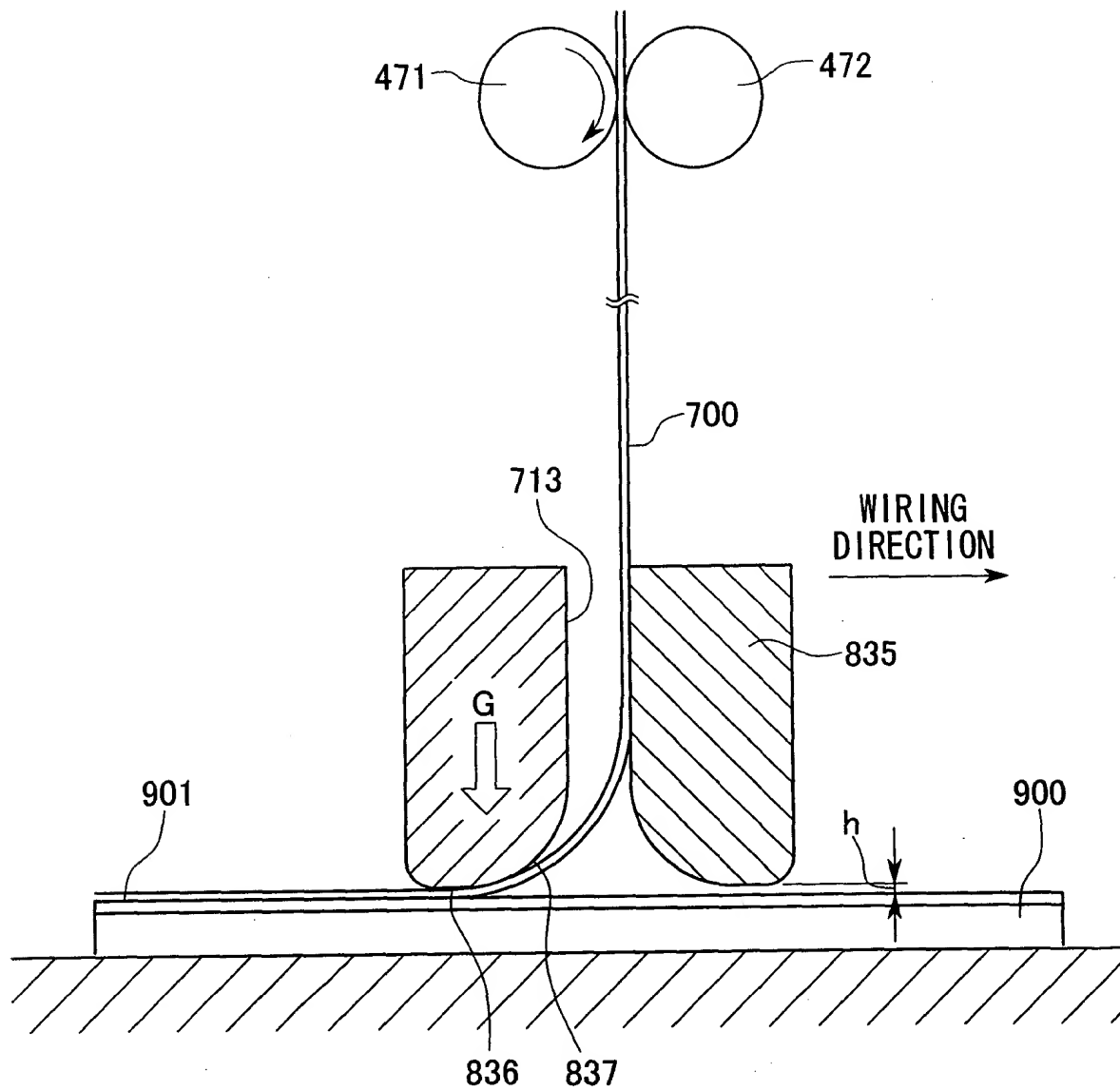


FIG.10

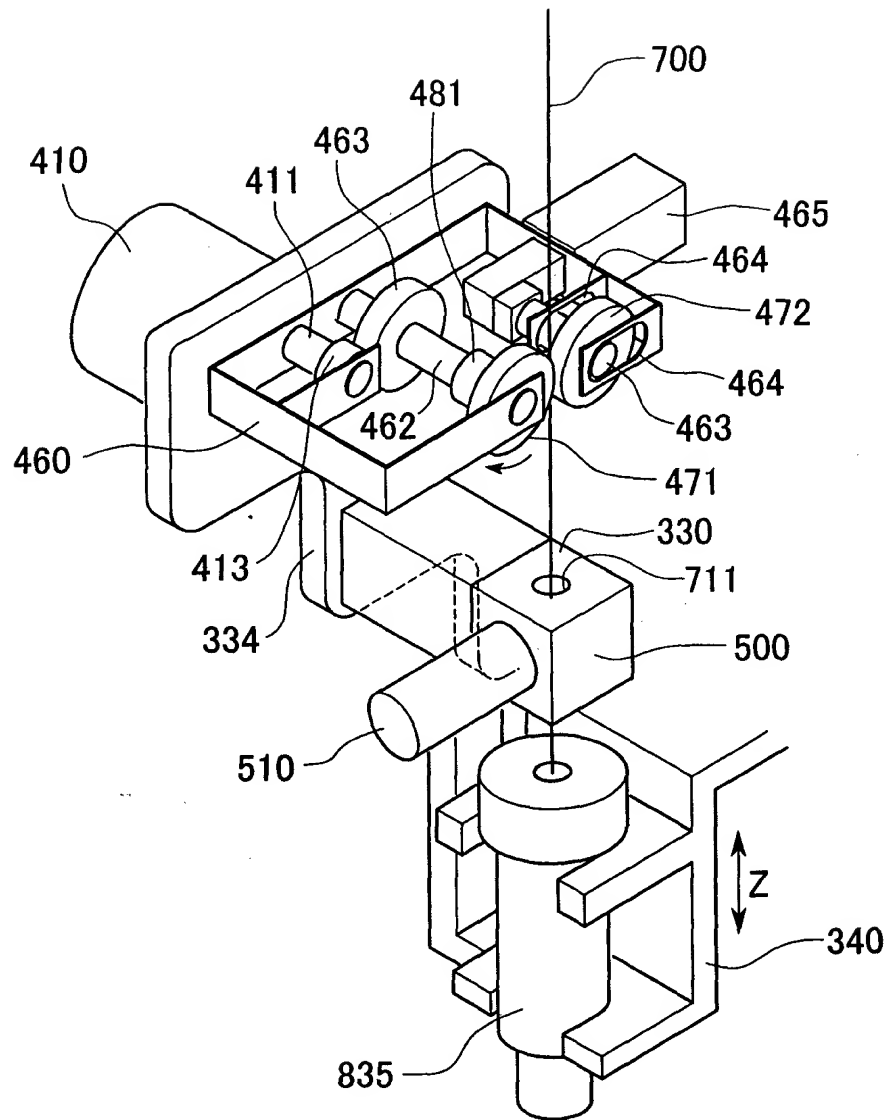


FIG.11a

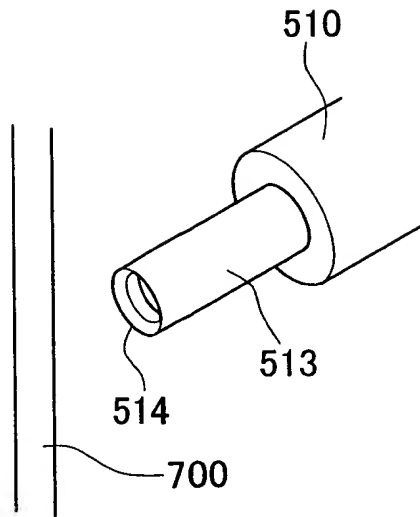


FIG.11b

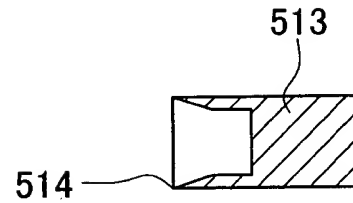


FIG.12

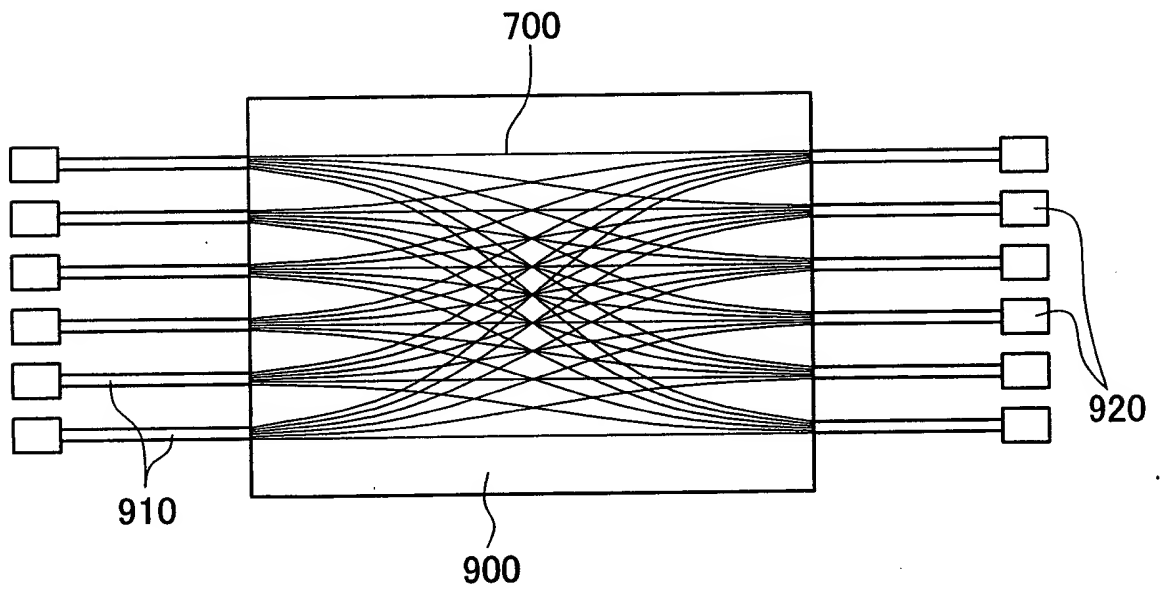


FIG.13

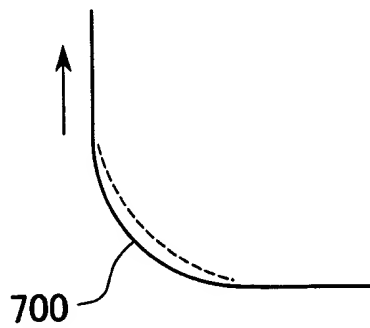
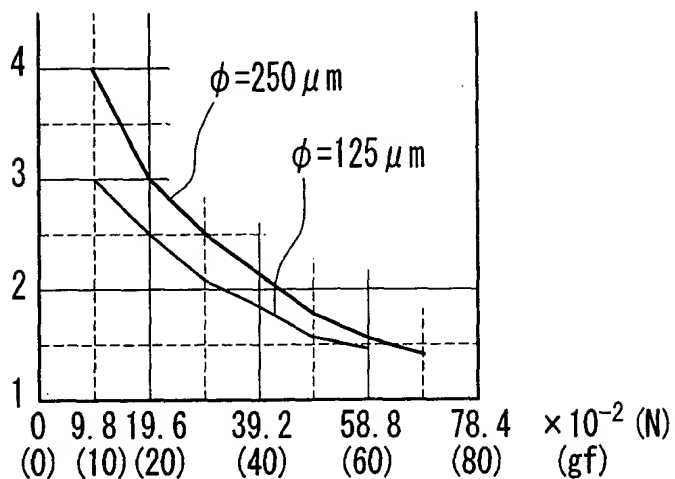


FIG.15

RADIUS OF CURVATURE
OF THE OPTICAL FIBER (mm)



PRESSURE OF OPTICAL FIBER
AGAINST WIRING HEAD

FIG.16

PRESSURE G OF WIRING HEAD	WIRING NUMBER	FREQUENCY OF PATTERN FAILURE
9.8×10^{-2} (N) (10gf)	1 0	0
1.9×10^{-1} (N) (20gf)	1 0	0
1.3 (N) (130gf)	1 0	0
2.0 (N) (200gf)	1 0	0
2.2 (N) (230gf)	1 0	2